

## **C-51 CONTROL STRUCTURE**

### **G-124**

This structure is a 7-barreled, corrugated metal pipe culvert located in the West Palm Beach Canal (C-51) about 3 1/2 miles west of State Road 7. Control is effected by manually operated slide gates on 2 of the culverts and by stop logs in riser pipes on each of the other culverts. The site was put into operation on January 25, 1982.

#### **PURPOSE**

This structure permits delivery to eastern Palm Beach County during dry periods from Water Conservation Area 1 or from Lake Okeechobee. It also permits flood discharges from the western C-51 Basin to tidewater. It also allows dry season withdrawals from the western C-51 Basin when the eastern portion of the basin is being held at a low stage.

#### **OPERATION**

Normally, the gates are closed and the stop logs are set to a crest elevation of 10.0 feet. The slide gates are opened to maintain an optimum stage at S-155 of 8.0 during the dry season.

During the wet season, the gates and the stop logged culverts are operated to prevent upstream (west of the structure) flooding, by holding a maximum stage of 13.

#### **FLOOD DISCHARGE CHARACTERISTICS**

	Design
Discharge Rate:	<u>1088</u> cfs
	7 year recurrence interval about 25% of SPF
Headwater Elevation:	<u>16.0</u> feet
Tailwater Elevation:	<u>14.0</u> feet
Type Discharge	<u>Submerged, uncontrolled</u>

#### **DESCRIPTION OF STRUCTURE**

Type: Corrugated metal pipe culverts with upstream control

Number of Barrels: 7

Size of Barrels                    1 - 36"  
    2 - 66"  
    4 - 72"

Length of Barrels:                50 feet "

Flow Line Elevation:            36" @ 7 feet  
    72" and 66" @ 5 feet

Crest Elevation:                 17 feet

Gates:

    Number:                        2

    Type:                            Slide Gates

    Size:                             72 inch

    Control:                        Manual

    Lift Mechanism:               Manually operated hand wheel

## Riser Pipes:

## 72" Culverts

    Diameter of Riser:            84"

    Top of Riser Elevation:        14 feet

## 66" Culverts

    Diameter of Riser:            84"

    Top of Riser Elevation:        14 feet

## 36" Culvert

    Diameter of Riser:            48"

    Top of Riser Elevation:        14 feet

## Stop Logs:

    Number of Sets:                5

    Number per Set:                36" culvert - 9  
    66" and 72" culvert - 24 (2 Bays of 12 each)

Size of Logs:

36" Culvert:	2½" X 7½" X 3'
66" Culvert	2½" X 7½" X 2'-9"
72" Culvert	2½" X 7½" X 3'

Water Level which will by-pass structure: 17 feet

**ACCESS:** Structure located on U.S. Highway 441 (State Road 80) about 3½ miles west of State Road 7, and 100 feet east of Blue Trace Bridge.

**HYDROLOGIC AND HYDRAULIC MEASUREMENTS**

Water Level: Staff gauges at upstream and downstream, telemetry gauge located on bridge about 2 miles downstream (Wellington Road).